

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 15-28 are pending. Claims 1-14 were previously canceled. No claims are amended by the present response.

As an initial matter, at item 10, the Office Action correctly noted that Applicants' representative misinterpreted LaGrone in the response submitted May 26, 2009 by arguing that LaGrone did not teach a gas driving an injector. Applicants agree that LaGrone teaches a fuel flow having a vapor (gas) to liquid ratio, and thus a combined gas and liquid driving fluid, and apologize for the misunderstanding of LaGrone in this respect.

At items 5 and 6, the Office Action rejected claims 15-26 and 28 under 35 U.S.C. § 103 as unpatentable over Sands et al. (U.S. 4,778,443) in view of Aarebrot et al. (WO 2000/011313), Holm (U.S. 3,075,918), and LaGrone (U.S. 4,339,917). At item 7, the Office Action rejected claim 27 under 35 U.S.C. § 103 as unpatentable over Sands et al. in view of Aarebrot et al., and LaGrone. At items 8-11, the Office Action responded to several arguments made in Applicants' response filed May 26, 2009.

Independent Claim 15 recites a process for treatment of fluids originating from a submarine oil field including delivering the fluid from the field to two or more separation stages where the fluid is split into a gas phase substantially consisting of light hydrocarbon gases and two liquid phases, one of which mainly consists of water, the other substantially of hydrocarbon liquids. The light hydrocarbon gases are delivered to a reinjection gas compression unit having at least two compression stages. Ejectors receive the light hydrocarbon gases from each separation stage after the high pressure separation stage and use the compressed gas exiting from one of the compression stages of the reinjection gas compression unit to drive each ejector.

The Office Action asserts that LaGrone discloses the use of compression gases exiting from a centrifugal pump as the driving fluid for an ejector and that it would have been obvious to combine this teaching with the systems taught in Sands et al. and Aarebrot et al. in order to improve suction capability of a fluid delivery system. Applicants respectfully submit that it would not have been obvious to combine Sands et al., Aarebrot et al., and LaGrone.

Applicants first submit that the cited references, individually or in combination, do not disclose all of the features of independent claim 1. Specifically, none of the cited references disclose or suggest a gaseous driving fluid exiting from one of the compression steps of a gas reinjection compression unit. Sands et al. and Aarebrot et al. do not disclose ejectors at all. In LaGrone, the driving fluid for the ejector is a liquid/gas mixture rather than a gas as recited in the present invention. Thus, LaGrone does not teach selecting a driving gas from a compression step in a gas reinjection system as recited in the present claims.

The Office Action also states that the reason to combine LaGrone with Aarebrot et al. with Sands et al. is to provide an improved suction capability of a fluid delivery system. Applicants respectfully submit that while the Background of the Invention in LaGrone refers to the suction capability generally, the Summary of the Invention more precisely refers to the goal of having a “high vapor-to-liquid ratio suction capability.” Col. 1, lines 36-37. See also, col. 3, lines 47-52 emphasizing the importance of the low temperature fluid into the ejector improving the vapor-to-liquid ratio of up to 0.5. In contrast, for example, in the preferred embodiment of the present invention (see, for example, claim 22), the driving gas is taken before it is cooled. Moreover, the driving gas in the present invention, particularly for example when including the requirements of claims 20-22, has had water particles removed. Thus, the driving gas in the present invention would have a vapor-to-liquid ratio far above that permitted by LaGrone which requires at least 50% liquid in the ejector. Thus, an important reason for having, and the manner of generating, the improved suction in LaGrone

(specific vapor-to-liquid ratio and low temperature driving fluid) are not applicable to the systems of Sands et al. or Aarebrot et al.

Applicants also respectfully respond to the Office Action's comment at item 9 concerning the Remarks made in the Amendment filed May 26, 2009. The Office Action rejected Applicants' argument that LaGrone was non-analogous art because it was not directed only to aircraft. Applicants' acknowledge that LaGrone holds out the possibility of its fuel system being applied in other applications involving gas turbine engines. Applicants' respectfully submit, however, that LaGrone is not analogous art more generally because it is directed to the field of fuel systems for gas turbine engines, rather than the handling of marine oil field fluids as in the present invention. Applicants submit that fuel systems for an engine and oil field fluid handling are substantially unrelated fields and that a person of ordinary skill in marine oil fields would not look to the field of fuel systems for guidance. Thus, Applicants respectfully continue to submit that a person of ordinary skill in the art would not look to LaGrone to modify the teachings of, e.g., Sands et al. and/or Aarebrot et al.

In addition, a primary purpose of the system of Sands et al. is to reduce the size and weight of the offshore petroleum facilities. See, col. 2, lines 35-41. Adding the multiple compressor system of Aarebrot et al. and additional ejectors of LaGrone violates this basic purpose of the relatively simple design of the Sands et al. system. For this reason as well, it would not have been obvious to combine Aarebrot et al. and LaGrone with Sands et al.

Dependent claims 20-22 are further distinguishable from cited references. These claims include the feature that each phase of compression includes a biphasic separator that removes liquid particles. Consequently, the compressed gas exiting from the compressors is lighter than the gas entering the compressor system, and more importantly, lighter than the gas received by the ejector from the gas separation stages. In contrast, in LaGrone the gas/fluid recycled to drive the ejector is the same fuel (albeit at a higher pressure and/or

different temperature) that is sucked into the ejector and then compressed. LaGrone thus differs substantially from the process of claims 20-22 which recite a process of using a different and lighter gas (after liquid particles have been removed) to drive the ejectors than the gas being ejected. Using the same gas to drive the ejectors would not result in the claimed process. In short, none of the cited references disclose using a different composition to drive an ejector as claimed. For this additional reason, claims 20-22 are further patentable over the cited references.

Much like claim 15, independent claim 27 recites a floating production unit including a treatment system having an ejector. Thus, independent claim 27 is patentable over the cited references for at least the same reasons as claim 15.

For the reasons discussed above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance for claims 15-28 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants undersigned representative at the below listed telephone number.

It is respectfully submitted that the present application is in condition for allowance, and a favorable decision to that effect is respectfully requested.

Respectfully submitted,

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